Frequently Asked Questions

What are some of the key points in the Interagency Performance Evaluation Task Force (IPET) Report 2?

Report 2 contains preliminary results that are emerging from the IPET ongoing investigation. The Corps chose to release these preliminary results now to ensure broad exposure, external evaluation and feedback, and application of the results immediately to the Corps' ongoing reconstruction of the protection system in southeast Louisiana. Report 2 contains a great deal of information on the protection system, Katrina's storm forces, and how parts of the system performed. The team has pushed hard and has developed a great deal of engineering information on the geodetic vertical datum, the storm surge and wave analysis, and even the system performance. But IPET has much analysis still ahead of them. This report is preliminary and is not a final position of IPET. More results will follow in IPET Report 3, and the final IPET Report (June 1 release). These reports will include additional information not only on the protection system, the storm forces and system performance, but also on consequences and future risk and reliability for the protective system.

Can you explain, in layman's terms, the breach mechanism, discussed by IPET in its report on the 17th Street Canal?

It involved both the sheet pile and the clay layer. The clay layer was much stronger at the center of the floodwall levee since the levees own weight had helped consolidate the clay. However, out toward the landward side toe of the levee, the clay layer was relatively weak. IPET preliminary reports say that the water forces on the sheet pile initiated a deflection of the floodwall – basically the sheet pile pushed landward, but the canal side of the levee stayed in place. This left a gap or crack down the canal face of the sheet pile that allowed the full hydrostatic pressure, or weight of the water, to push down the face of the floodwall sheet pile. This enormous pressure went down the sheet pile to its bottom depth. This force, coupled with the relatively weak shear strengths in the clay layer, allowed the whole landward side of the levee to move laterally within the clay layer. Neither mechanism by itself was enough to breach the wall. The IPET Report is a preliminary report and it is still subject to revision as the investigation continues.

How high was the water in the 17th Street Canal when the breach occurred?

IPET currently believes that the water in the 17th Street Canal was about 7 or 8 feet on the floodwall when it breached.

Was the London Avenue Canal breach, although not covered in IPET Report 2, similar to the 17th Street Canal Breach?

The London Ave. breach mechanisms are still under investigation by IPET. The results should be in IPET Report 3, scheduled for release May 1.

If you are going to close off the canals, why keep testing to find the breach mechanism?

The Corps needs to accurately determine the breach mechanisms. With this knowledge the Corps can more reliably assess the integrity of the rest of the system. This is important to understand for future risk and to help design more effective protection. Such knowledge in engineering will not only benefit Louisiana citizens, but can be used in other protective systems across the nation.

Since the I-wall at 17th Street Canal breached, is there cause for concern about the structural integrity of all I-wall sheet pile in the New Orleans system?

The Corps is currently evaluating the entire system. The Corps is committed to determining the breach mechanisms. Once identified, these mechanisms will help the Corps to determine the condition of the rest of the system that did not breach and understand why. Many miles of I-Walls withstood the extreme water elevations produced by Hurricanes Katrina and Rita.

What about other Louisiana projects? Is there reason to have concerns about the entire Louisiana protection system?

Currently we are evaluating the hurricane protection system. Many of the I-walls in the Atchafalaya Basin have withstood multiple hurricane and flood events with no adverse affects. We will re-evaluate the walls in the basin on a case-by-case basis. We anticipate that the critical findings and conclusions of IPET will advance the state of the art of civil engineering and will be applied throughout the nation.

Are the Canals being permanently closed off?

We are currently installing interim closures and temporary pumps on 17th St., Orleans, and London Ave. canals. We are awaiting authorization from Congress to proceed with permanent closures and pump stations for the canals.

How has subsidence affected the conditions of the levees?

Subsidence is a regional phenomenon, which varies with respect to location. Each reach of levee was affected in varying amounts.

Where are the I-walls located?

There are I-Walls located throughout the Hurricane Protection systems on the east and west banks of the Mississippi River, the Mississippi River levee system, and the Atchafalaya Basin system.

How many miles of I-walls in each parish?

The Corps is in the process of updating its inventories. These numbers are approximate and represent the pre-Katrina system. Hurricane protection: St. Charles Parish – 1 mile; Jefferson (East bank) – 2.5 miles; West bank (Jefferson, Orleans & Plaquemines combined) – 4 miles. The Corps is constantly building and improving the system, so the number will change over time.

What type of storm can the system protect against now?

The IPET final report's section on Risk and Reliability is expected to help answer questions about the future protection capability of the system. IPET expects to release that report June 1.

How much money is it going to cost to fix all the I-walls? When will the I-Walls be fixed?

The Corps is currently restoring the hurricane protection system to its pre-Katrina levels. This work is scheduled to be complete by June 2006. Total cost for this hurricane protection system reconstruction is approximately $770 Million. The undamaged floodwalls will not be fixed by June 2006. However, we are re-analyzing all walls using revised, more conservative design criteria. The cost for replacing these walls is not known at this time. We are currently installing interim closures on the 17th St., Orleans, and London Ave. canals at a cost of approximately $100 Million. We are awaiting authorization from Congress to proceed with permanent closures for the canals.

What is the 'vertical datum' change?

The change in "Datum" is a change in where we measure from to establish elevations on structures, benchmarks, etc. The datum shift from NGVD29 to NAVD88 is not constant. The datum surfaces are not parallel and therefore vary with the location. A datum change does not change the relationship of the levee heights to the water. First, the definition of the two datum:

The National Geodetic Vertical Datum of 1929 (NGVD29), previously referred to as Sea Level Datum of 1929, was the network of over 20,000 miles of levels constrained to Mean Sea Level (MSL) at 26 tide stations around North America. The network was warped due to variations in the Local Mean Sea Level (LMSL) at those 26 tide stations. These variations introduced errors into the network adjustment. The datum is not mean sea level and was renamed the National Geodetic Vertical Datum of 1929 in 1973.

The North American Vertical Datum of 1988 (NAVD88), completed in June of 1991 contained an additional 100,000 miles (15,000+ miles of new levels) of levels and was a minimally constrained adjustment, constrained only to the primary tidal benchmark at Father Point/Rimouski, Quebec, Canada.

About 100,000 miles of leveling had been added to the National Geodetic Reference System (NGRS) since NGVD 29 was created. In the early 1970s, NGS conducted an extensive inventory of the vertical control network. Many existing benchmarks were affected by crustal motion associated with earthquake activity, postglacial rebound (uplift), and subsidence. Forcing the 100,000 miles of leveling to fit previously determined NGVD 29 height values caused other problems, like distortions in the network. NAVD88 was created to eliminate those errors, incorporate the additional leveling, and to produce a new network that is consistent with both conventional and GPS leveling.

Was the level of protection up to the category 3 level?

The hurricane protection was designed and built, as authorized by Congress, for a Standard Project Hurricane. This "hurricane" was developed prior to the introduction of the Saffir-Simpson scale, or the "categories" that people are most accustomed to seeing. If broken into hurricane categories, the Standard Project Hurricane for Lake Pontchartrain & Vicinity corresponds to a Category 2 wind speed; a Category 3 storm surge; and a Category 4 barometric pressure. The Standard Project Hurricane is often approximated as a fast-moving Category 3 hurricane.

Do all the undamaged floodwalls have to be fixed by June 1? Can that be done and at what cost?

The undamaged floodwalls will not be fixed by June 1, 2006. The Corps is re-analyzing all walls using revised, more conservative design criteria. The cost for replacing these walls is not known at this time.

Will the work by the Corps require that additional land be acquired? If so, how would owners be compensated?

If material must be placed outside the existing non-Federal Sponsors rights-of-way, additional property would have to be acquired. This is currently being evaluated. If additional property had to be acquired, property owners would be compensated in accordance with applicable Federal laws.